PARASCIADONUS BREVIBRACHIUM N. GEN. ET SP. – AN ABYSSAL APHYONID FROM THE CENTRAL ATLANTIC (PISCES, OPHIDIIFORMES)

by

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ABSTRACT. – *Parasciadonus brevibrachium* n. gen. et sp. is described on the basis of a ripe female caught at abyssal depth in the Central Atlantic Ocean. It differs from the closest related genus *Sciadonus* by the short pectoral peduncle, the high number of pectoral fin rays, the presence of small skin flaps in lateral line, and the posterior origin of the dorsal fin.

RÉSUMÉ. – *Parasciadonus brevibrachium* n. gen. et sp. est décrit à partir d'un exemplaire femelle mature capturé à une profondeur abyssale dans l'Océan Atlantique central. Il diffère du genre très voisin *Sciadonus* par l'existence d'un pédoncule pectoral court, un grand nombre de rayons à la nageoire pectorale, la présence de petits replis de peau sur la ligne latérale et la position reculée de l'origine de la nageoire dorsale.

Key-words: ASW, Aphyonidae, Parasciadonus brevibrachium, new species, abyssal zone.

A single aphyonid specimen, representing an unknown genus and species, was caught during the French « Biovema » expedition in 1977 to the Central Atlantic Ocean. Thanks to Jean-Claude Hureau I have had the opportunity of studying the specimen. Daniel M. Cohen kindly read the manuscript and provided many helpful comments.

Parasciadonus (n. gen.)

Type species *P. brevibrachium* n. sp.

This new genus agrees with the diagnosis of the Aphyonidae given by Cohen & Nielsen (1978: 60), except for a somewhat larger number of precaudal vertebrae (50 *vs.* 26-48).

Diagnosis. A long, slender aphyonid with a protruding lower jaw and an almost horizontal mouth. Minute skin flaps (12-19) along lateral line on each side of body. Palatines edentate and vomer with very weak dentition. Eyes much reduced. Rakers on anterior gill arch as minute tubercles. Vertebral centra rectangular in lateral view. Dorsal fin originating posteriorly ; predorsal 49.5 % of standard length. Pectoral peduncle short, supporting 20 fin rays ; caudal fin rays 7 ; ventral fins not developed.

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Relationship. As indicated by the proposed name, *Parasciadonus* is most closely related to *Sciadonus* Garman, 1899, which is here used in the sense of Cohen & Nielsen (1978: 62), i.e. including *Leucochlamys* Zugmayer, 1911. *Parasciadonus* and *Sciadonus* share the following apomorphic characters:elongate body, horizontal mouth with protruding lower jaw, lack of developed gill rakers on anterior arch, and few caudal fin rays. It differs from *Sciadonus* by the short pectoral peduncle (much longer than broad in *Sciadonus*), the high number of pectoral fin rays (20 *vs.* 9-14), the posterior origin of the dorsal fin (above 33rd verterbra *vs.* 13th-21st vertebrae), presence of small skin flaps in lateral line (absent in *Sciadonus*), and lack of a pair of fleshy appendages at genital opening in female (present in *Sciadonus*). From a phylogenetic point of view *Parasciadonus* appears to be intermediate between the specialized *Sciadonus* and the less advanced genera.

Diagnostic characters of the aphyonid genera :

	Barathronus	*Aphyonus*	*Nybelinella*	*Meteoria*	*Sciadonus*	*Parasciadonus*
Body form :						
short - depth at anus ⟩ 10 %	+	+	+	+	–	–
long - depth at anus ⟨ 7 %	–	–	–	–	+	+
Pectoral peduncle elongate	–	–	–	–	+	–
Pectoral peduncle short	+	+	+	+	–	+
Vertebral centra in adults :						
rectangular	–	+	+	+	+	+
sand-glass formed	+	–	–	–	–	–
Number of pectoral fin rays	21-26	13-19	23-27	13-15	9-14	20
Number of caudal fin rays	9-10	7-8	8	8	6-7	7
Number of ventral fin rays	1	1	1	0	1-0	0
Number of pre-caudal verteb.	31-38	26-33	36-41	39-41	39-48	50
Number of developed gill rakers	24-33	3-14	6-7	0	0	0

Parasciadonus brevibrachium n. sp. (Fig. 1)

Material : (1 specimen). *Holotype*: Biovema st. A (CP 02) Central Atlantic (10°59' N, 45°15'W), 5073 m, bottom trawl, 14 Nov. 1977. MNHN 1979-228 (SL 72 mm, ♀).

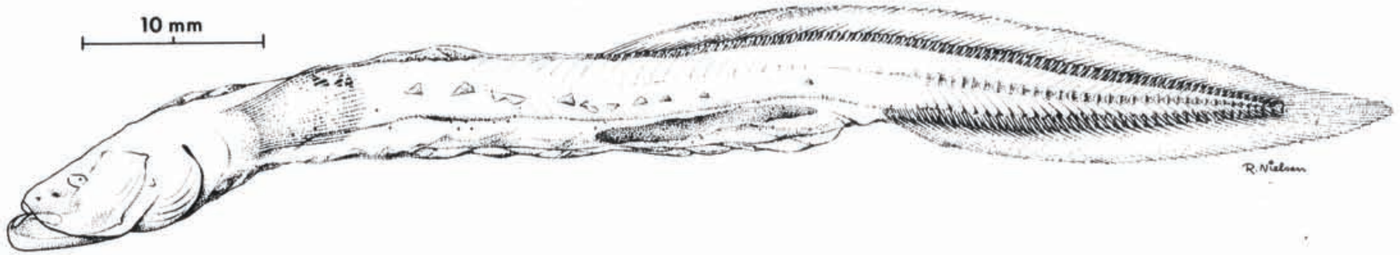

Fig. 1. – Holotype of *Parasciadonus brevibrachium*, SL 72 mm (MNHN 1979-228).

Diagnosis : See diagnosis of genus.

Description.

Meristic characters : Dorsal fin rays 78, caudal 7, anal 48, pectoral 20, ventral 0, gill rakers on anterior arch 15 all developed as small tubercles (fig. 3), vertebrae 50+35 (including ural centra), anterior anal fin ray below dorsal fin ray no. 33 and below vertebra no. 52, anterior dorsal fin ray above vertebra no. 33.

Morphogenic characters in percentage of standard length (72 mm) with the length in mm in parenthesis. Measurements are taken from the lower jaw symphysis due to the protruding lower jaw : head 16.5 (12), upper jaw 7.0 (5), depth at anus 7.0 (5), preanal 72 (51.5), predorsal 49.5 (35.5).

General description : Loose, scaleless and transparent. Head about double as wide as body with a flat profile. Lower jaw much protruding. Dorsal fin origin at midpoint of fish, far behind tip of pectoral fin rays. Dorsal, caudal, and anal fins united. Basis of anal fin less than one third of standard length. Basis of pectoral fin broad, more than half the height of body. Pectoral peduncle as broad as long. Deeply placed eyes indistinct; appearing as a dark spot surrounded by a black ring. Nostrils midway between upper lip and eye. No spine on operculum. General colour yellowish. Scatte-

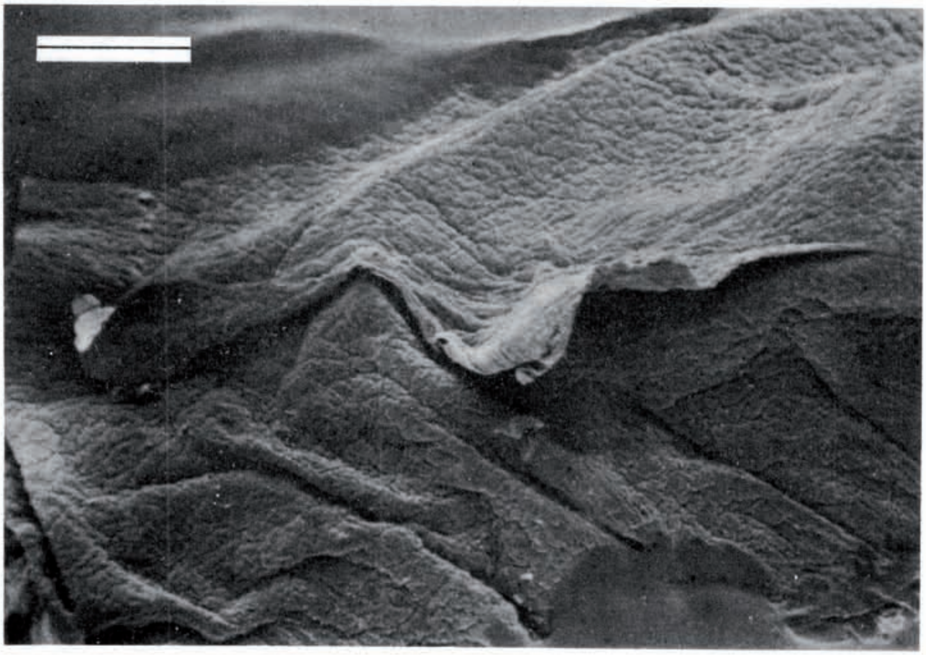

Fig. 2. – Lateral line skin flaps from holotype of *Parasciadonus brevibrachium* (SEM). The scale indicates 400 μ.

red, black pigment spots found only on peritoneum and in dorsal midline. Visible parts of eyes black. Musculi infracarinales mediales with distinct segments. Ratio between length and height of « middle fields » (Nielsen, 1969:9) 1.2. Otoliths c. 1 mm in diameter.

Lateral line : Lateral line papillae in aphyonids are normally rather scarce and minute. None of these typical indistinct papillae are developed here, but peculiar « skin flaps » (fig. 2) are found on both sides of the body. They are of different sizes, are spaced unequally, and are found in a number of 12 on the left and 19 on the right side. The anterior is placed slightly behind the pectoral fin base and the posterior flap before the anus. A histological examination (10 μ sections) shows that only the corium remains. The function of the « skin flaps » is unknown.

Dentition : Anterior half of dentaries with 2-3 irregular rows of sharp, retrorse teeth near the symphysis with the largest teeth in the inner row. Further back the teeth are in one row only. The posterior half is edentate. A similar dentition is found on the premaxillaries. Palatines without teeth and vomer with a few very small, blunt teeth.

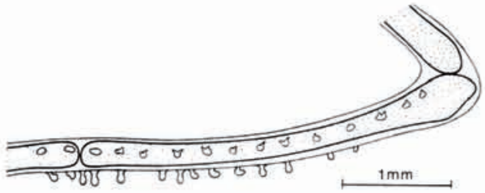

Fig. 3. – Anterior, left gill arch of holotype of *Parasciadonus brevibrachium.*

Gill cavity : The anterior gill arch is shown in fig. 3. The rakers in the outer row are extremely small, some with 1-2 spines. Rakers on epibranchiale 0, ceratobranchiale 13, and hypobranchiale 2. Rakers on inner row of anterior arch considerably longer and more spiny. The 14 gill filaments are very poorly developed. The 2nd - 4th arches have equally long rakers in both rows, corresponding to length of rakers in inner row of anterior arch ; gill filaments are more numerous and considerably longer than those on anterior arch. Only a few rakers on 5th arch. Pseudobranchial filaments are not developed.

Axial skeleton (from radiographs) : Precaudal vertebrae 50 and caudal 35 including ural centra. Neural spine on anterior vertebra as long as following ones. No ribs and parapophyses appear. Neural and corresponding haemal spines are of equal length. Ratio between length and height of last precaudal centrum is 0.5.

Viscera : All viscera are without pigmentation. Oesophagus and stomach are a continuous straight tube. Anterior part of intestine wider and more thin-walled than stomach. The short intestine forms no coils. Tip of liver ends posterior to stomach.

Gonads : A histological examination (10 µ sections) of part of one of the 12 mm long ovaries shows many eggs of different sizes. None seem to contain embryos but numerous spermatozoans surround the ovarian tissue. No fleshy appendages developed near the genital opening.

Distribution

The only specimen known was caught in the Central Atlantic by an open bottom trawl working at a depth of 5073 m. It is not known how near the bottom this viviparous fish was caught. There is no identifiable stomach contents.

Name

The specific name, *brevibrachium*, refers to the short pectoral peduncle.

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